1 Docket No. FOM-119.01

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VERY HIGH REPETITION RATE POWER SUPPLY SYSTEM AND METHOD

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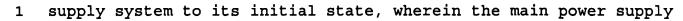
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ABSTRACT OF THE DISCLOSURE

A system and method for a power supply system that charges a 6 capacitor, wherein the capacitor charge drives a pulse discharge 7 driven system. The power supply system utilizes a main power 8 supply and a resonant inductor and capacitor configuration to 9 charge the capacitor to a specified, large percentage of a 10 driving voltage that is required by the pulse system. A control 11 module monitors the capacitor charge and disconnects the main 12 power supply when the capacitor charge is within the specified 13 The main power supply disconnect causes the inductor 14 percentage. 15 to discharge and similarly charge the capacitor in a more controlled manner. Once the control module measures the 16 capacitor voltage at the full driving voltage, the control module 17 commands a switch to separate the inductor from the capacitor. 18 The control module similarly activates a small high voltage power 19 20 supply that monitors the capacitor and replenishes any natural capacitor discharge that may occur in the time between the full 21 22 capacitor charge and the capacitor discharge by the pulse discharge driven system. Once the pulse discharge driven system 23 discharges the capacitor, the control module returns the power 24

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- 2 and residual energy in the capacitor cooperate to efficiently
- 3 charge the inductor and capacitor. The charging cycle continues
- 4 repeatedly as a function of the pulse discharge driven system
- 5 requirements.

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